CLAIMS:

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is:

1   1. An automatic flowcharting method for diagrammatically representing a

2 multi-nodal process comprising processing operations and decision operations, said

3 method comprising:

4   (a) converting processing operations and decision operations of said multi-

5 nodal process into a data structure;

6   (b) analyzing said data structure for identifying a first group of processing

7 operations that appear once in said data structure, and for identifying a second group of

8 processing operations that are associated with two or more decision operations in said

9 data structure;

10   (c) traversing said data structure to generate an ordered sequence of

11 processing operations for visual representation; and

12   (d) generating a diagrammatic representation of said ordered sequence

13 including orienting successive processing operations in a vertical dimension and

14 associating attributes to each processing operation of said processing operations

15 according to their identified group while offsetting each successive processing operation

16 in a horizontal dimension, and linking each processing operation of said second group to

17 a further processing step of said processing steps according to a decision operation of

18 said two or more decision operations.

1   2. The automatic flowcharting method according to Claim 1, said method

2   further comprising the step of:

3   associating a first visual attribute to said processing operations in said first

4   selected group and a second visual attribute to said processing operations in said second

5   selected group.

1   3. The automatic flowcharting method according to Claim 2, wherein said

2   first visual attribute is a first color.

1   4. The automatic flowcharting method according to Claim 2, wherein said

2   second visual attribute s a second color.

1   5. The automatic flowcharting method according to Claim 1, said

2   analyzing step further comprising:

3   identifying a third group of processing operations that repeatedly appear in

4   said data structure.

1   6. The automatic flowcharting method according to Claim 5, said

2   analyzing step further comprising:

3   associating a third visual attribute to said processing operations in said

4   third group.

1   7. The automatic flowcharting method according to Claim 6, wherein said

2   third visual attribute is a third color.

1   8. The automatic flowcharting method according to Claim 1, said method

2   further comprising a step of:

3   reading an input file containing said processing operations and said

4   decision operations for said multi-nodal process, said processing operations and said

5   decision operations being arranged into a plurality of records each of said plurality of

6   records containing a first processing operation, a second processing operation and a

7   decision operation.

1   9. The automatic flowcharting method according to Claim 8, said method

2   further comprising a step of:

3   automatically exporting said processing operations and said decision

4   operations for said multi-nodal process from a database into said input file.

1   10. The automatic flowcharting method according to Claim 1, said

2   analyzing step further comprising a step of:

3   detecting deadlock conditions in said sequence.

1   11. The automatic flowcharting method according to Claim 1, wherein the

2   linking of each processing operation of said second group includes aligning said

3   processing operation to said further processing step in said vertical dimension.

1   12. The automatic flowcharting method according to Claim 1, wherein

2   said each successive processing operation is offset in said horizontal dimension relative

3   to an immediate prior processing operation.

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1   13. The automatic flowcharting method according to Claim 1, said method

2 further comprising a step of:

3   writing an output file for said generated diagrammatic representation of

4 said multi-nodal process.

1   14. The automatic flowcharting method according to Claim 13, wherein

2 said output file is written in a markup language for presentation in a web-enabled

3 browser.

1   15. The automatic flowcharting method according to Claim 14 wherein

2 said output file is transmitted over a communications network.

1   16. The automatic flowcharting method according to Claim 15 wherein

2 said communications network is one selected from the group comprising:

3   an Intranet, and

4   the Internet.

1   17. An automatic flowcharting system for diagrammatically representing a

2 multi-nodal process comprising processing operations and decision operations in a client-

3 server environment, said system comprising:

4   (a) a server interconnected via a communications network to a client, said

5 server including:

6   (i) a mechanism for converting processing operations and decision

7 operations of said multi-nodal process into a data structure;

8   (ii) a mechanism for analyzing said data structure for identifying a

9   first group of processing operations that appear once in said data structure, and for

10   identifying a second group of processing operations that are associated with two or more

11   decision operations in said data structure; and

12   (iii) a mechanism for traversing said data structure to generate and

13   ordered sequence of processing operations for visual representation;

14   (iv) a mechanism for generating a diagrammatic representation of

15   said ordered sequence including orienting said processing operations in a vertical

16   dimension and associating attributes to each processing operation of said processing

17   operations according to their identified group while offsetting each successive processing

18   operation in a horizontal dimension, and linking each processing operation of said second

19   group to a further processing step of said processing steps according to a decision

20   operation of said two or more decision operations;

21   (b) said client for receiving said generated diagrammatic representation of

22   said multi-nodal process via said communications network in a form for presentation by

23   said client.

1   18. The automatic flowcharting system according to Claim17, said server

2   further including:

3   a mechanism for associating a first visual attribute o said processing

4   operations in said first group and a second visual attribute to said processing operations

5   in said second group.

1   19. The automatic flowcharting system according to Claim 18, wherein

2   said first visual attribute is a first color.

1   20. The automatic flowcharting system according to Claim 18, wherein

2   said second visual attribute is a second color.

1   21. The automatic flowcharting system according to Claim 17, said

2   mechanism for analyzing further comprising:

3   a mechanism for identifying a third group of processing operations that

4   repeatedly appear in said data structure.

1   22. The automatic flowcharting system according to Claim 21, said

2   mechanism for analyzing further comprising:

3   a mechanism for associating a third visual attribute to said third group of

4   processing operations.

1   23. The automatic flowcharting system according to Claim 22, wherein

2   said third visual attribute is a third color.

1   24. The automatic flowcharting system according to Claim 17, said server

2   further including:

3   a mechanism for reading an input file containing said processing

4   operations and said decision operations for said multi-nodal process, said processing

5   operations and said decision operations being arranged into a plurality of records each of

1   said plurality of records containing a first processing operation, a second processing

2   operation and a decision operation.

1   25. The automatic flowcharting system according to Claim 24, said server

2   further including:

3   a mechanism for automatically exporting said processing operations and

4   said decision operations for said multi-nodal process from a database into said input file.

1   26. The automatic flowcharting system according to Claim 17, said

2   mechanism for analyzing further comprising:

3   a mechanism for detecting deadlock conditions in said sequence.

1   27. The automatic flowcharting system according to Claim 17, wherein in

2   the mechanism for generating, each processing operation of said second selected group is

3   vertically linked to said further processing step of said processing steps.

1   28. The automatic flowcharting system according to Claim 17, said

2   mechanism for generating further comprising:

3   a mechanism for determining a horizontal indentation for each successive

4   processing operation of said processing operations.

1   29. The automatic flowcharting system according to Claim 17, said server

2   further including:

1   a mechanism for writing an output file of said generated diagrammatic

2 representation of said multi-nodal process.

1   30. The automatic flowcharting system according to Claim 28, wherein

2 said output file is written in a markup language for presentation in a web-enabled

3 browser by said client.

1   31. The automatic flowcharting system according to Claim 30, wherein

2 said output file is transmitted over said communications network.

1   32. The automatic flowcharting method according to Claim 31, wherein

2 said communications network is one selected from the group comprising:

3   an Intranet, and

4   the Internet.

1   33. A program storage device readable by a machine, tangibly embodying

2 a program of instructions executable by the machine to perform an automatic

3 flowcharting method for diagrammatically representing a multi-nodal process comprising

4 processing operations and decision operations, said method comprising:

5   (a) converting processing operations and decision operations of said multi-

6 modal process into a data structure;

7   (b) analyzing said data structure for identifying a first group of processing

8 operations that appear once in said data structure, and for identifying a second group of

9   processing operations that are associated with two or more decision operations in said

10   data structure; and

11   (c) traversing said data structure to generate an ordered sequence of

12   processing operations for visual representation;

13   (d) generating a diagrammatic representation of said ordered sequence

14   including orienting said processing operations of in a vertical dimension and associating

15   attributes to each processing operation of said processing operations according to their

16   identified group while offsetting each successive processing operation of said in a

17   horizontal dimension, and linking each processing operation of said second group to a

18   further processing operation of said processing operations according to a decision

19   operation of said two or more decision operations.

1   34. The program storage device according to Claim 33, said method

2   further comprising the step of:

3   associating a first visual attribute to said processing operations in said first

4   group and a second visual attribute to said processing operations in said second group.

1   35. The program storage device according to Claim 34, wherein said first

2   visual attribute is a first color.

1   36. The program storage device according to Claim 34, wherein said

2   second visual attribute is a second color.

1   37. The program storage device according to Claim 33, said analyzing step

2 further comprising:

3   identifying a third group of processing operations that repeatedly appear in

4 said data structure.

1   38. The program storage device according to Claim 37, said analyzing

2 step further comprising:

3   associating a third visual attribute to said third group of processing

4 operations

1   39. The program storage device according to Claim 38, wherein said third

2 visual attribute is a third color

1   40. The program storage device according to Claim 33, said method

2 further comprising a step of:

3   reading an input file containing said processing operations and said

4 decision operations for said multi-nodal process, said processing operations and said

5 decision operations being arranged into a plurality of records each of said plurality of

6 records containing a first processing operation, a second processing operation and a

7 decision operation.

1   41. The program storage device according to Claim 40, said method

2 further comprising a step of:

1   automatically exporting said processing operations and said decision

2   operations for said multi-nodal process from a database into said input file.

1   42. The program storage device according to Claim 33, said analyzing

2   step for determining a sequence further comprising a step of:

3   detecting deadlock conditions in said sequence.

1   43. The program storage device according to Claim 33, wherein the

2   linking of each processing operation of said second group includes visually aligning said

3   processing operation in said vertical dimension to said further processing step.

1   44. The program storage device according to Claim 33, wherein said each

2   successive processing operation is offset in said horizontal dimension relative to an

3   immediate prior processing operation.

1   45. The program storage device according to Claim 33, said method

2   further comprising a step of:

3   writing an output file of said generated diagrammatic representation of

4   said multi-nodal process.

1   46. The program storage device according to Claim 45, wherein said

2   output file is written in a markup language for presentation in a web-enabled browser.

1   47. The program storage device according to Claim 46, wherein said

2   output file is transmitted over a communications network.

1   48. The program storage device according to Claim 47, wherein said

2 communications network is one selected from the group comprising:

3   an Intranet, and

4   the Internet.